

**METHOD TO AUTOMATICALLY HANDLE UNDESIRED ELECTRONIC MAIL  
IN COMMUNICATION NETWORKS AT THE RECEIVER END**

**BACKGROUND OF THE INVENTION**

5

**1. Field of the Invention**

This invention pertains to a process to automatically handle undesired electronic mail in communication networks.

10 **2. Background**

Large portions of the population use electronic mail today for commercial or private purposes, or both. In this regard, the so-called “e-mail” process using standardized TCP/IP-based internet protocol (IETF RFC 791) is most popular.

The basic procedure is shown in Fig. 1. A sender, for example a personal computer (PC) 1.1, sends an e-mail 1.2 via the public internet 1.3, containing a target address of a recipient 1.7. The internet assigns the email to one of the internet service provider's (ISP) 1.4 e-mail servers 1.5 based on agreed-upon protocols and name conventions. This server administers the recipient addresses. The e-mail server 1.5 places the message into the recipient's mailbox 1.6, from which the recipient 1.7 can retrieve it.

The recipient address can be a so-called “alias” address containing plain language identification, followed by the internet service provider address (ISP address) and the country identification, such as:

Heinz.Mustermann@recipient-ISP.de.

The mail protocol also contains a sender's address, which is constructed in the same sense, such as:

5 Schrott-Versandt@sender-ISP.de.

Unfortunately, misuse of electronic mail is very common. Dubious senders annoy large sections of the population with undesired e-mails, which in practice are often of a pornographic, radical and/or advertising nature.

10 The purpose of this is to attract money through the back door from unsuspecting customers. Often, viruses also find their way into PCs this way. This type of undesired mail delivery is often called "junk mail" in internet parlance.

### SUMMARY OF THE INVENTION

15

A purpose of this invention is to propose a method to automatically handle undesired electronic mail in communication networks from the receiving end in order to stop the undesired annoyance of the recipient by junk mail.

20 According to an embodiment of the invention, the sender address accompanying an incoming e-mail is automatically compared to an electronically accessed list of authorized sender addresses assigned to the receiver, the comparison being performed before the e-mail is stored in a mailbox of the recipient. The only e-mails transferred to the receiver's mailbox are those that had clearly been sent by authorized senders.

In a preferred embodiment of the invention, two logically and/or physically separate mailboxes are provided, wherein the e-mail server sends to the second JMB mailbox all incoming e-mails that indeed have the subscriber's correct recipient address but are not contained in the sender list on the receiving side, thus making them

5 available for further processing by the internet service provider, administrative authorities, or by the recipient, or any combination of processors.

Preferably, the e-mails can be put through an automatic handling or analysis process, or both, which can be configured by the recipient or by the ISP, or both, in the

10 e-mail server, in a comparison device and/or at least one of the mailboxes, the process initiated and configured either on a case-by-case basis or permanently. In particular, all programs that execute automatically that were sent as attachments to the e-mails can be separated in the JMB.

15 On the other hand, the e-mail can be analyzed to see if there is serial, incremental user identification occurring, which would enable inferences to be drawn concerning automatic attempts at breaking into the e-mail system. This additional analysis makes it possible to very easily identify malicious individuals who automatically try all possible codes.

20

According to a further development of the invention, discontinuation requests or cease and desist demands can be generated automatically and delivered to the senders of undesired e-mails.

Furthermore, virus checks can be carried out, for example at an established time of day or each time a message arrives, and the contents of the JMB can be cyclically deleted at specific time intervals.

5

#### **BRIEF DESCRIPTION OF THE DRAWING**

The purposes, advantages, and features of the invention will be more readily perceived from the following detailed description, when read in conjunction with the  
10 accompanying drawing, wherein:

Figure 1 is a schematic representation of an e-mail delivery system via the internet; and

15 Figure 2 is a representation of an e-mail delivery system in accordance with the method of the invention.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

With the general e-mail delivery method according to Fig. 1 as a starting point,

- 5 Fig. 2 shows the method according to the invention. The sender address of the e-mail  
2.1 arriving at the ISP 1.4 is automatically verified in an analysis device 2.2 of the e-  
mail server 1.5. The sender addresses authorized specifically for the recipient are stored  
in a database 2.3 in the form of a sender list. E-mails with sender addresses that are  
contained in list 2.3 are considered legitimate and are delivered to mailbox MB 2.4 of  
10 recipient 2.6.

All other e-mails with correct recipient addresses but with unauthorized sender  
addresses are either thrown out or are delivered to a second mailbox (Junk Mail Box  
JMB) 2.5. The recipient can inspect the contents of JMB 2.5 as necessary.

- In this way, recipient 2.6 is not bothered by undesired senders who do in fact  
15 know his correct e-mail address but are not authorized by the recipient. By introducing  
the optional JMB 2.5, the subscriber can still inspect all mails if he wishes.

Furthermore, there are automatic configuration options in the sender analysis  
and/or in at least one of the mailboxes 2.4, 2.5 that can be set up by the subscriber or by  
the ISP, or by both. The generation and administration of the sender list is the  
20 responsibility of the respective subscriber, that is, the owner of the MB. Optionally, he  
can automatically transfer mail sender information in the messages to the MB by  
selecting the respective mail message and “clicking” a function/command provided for  
this purpose. This alleviates having to manually enter the sender information.

Incoming mails in JMB 2.5 can be checked for viruses or for illegal or immoral content. Attachments, for example, executable programs that could contain viruses, can be deleted and/or inferences can be drawn about the sender based on the recipient address fields and discontinuation requests or cease and desist demands can be

5 automatically delivered.